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device being greater in number than the scanning signal lines, said method comprising the step of:
simultaneously outputting the display scanning signals and the display data signals
according to the non-image area with respect to the respective scanning signal lines and the
respective data signal lines that correspond to the non-image area.

REMARKS

Applicants appreciate the Examiner's thorough examination of the subject application and request reconsideration of the subject application based on the foregoing amendments and the following remarks.

Claims 1-39 are pending in the subject application. Claims 1-39 stand rejected under 35 U.S.C. §102 and/ or 35 U.S.C. §103.

Claims 1, 9, 17, 24, 27 and 33 were amended to more distinctly claim Applicants' invention. Claims 40-43 were added to more distinctly claim embodiments of Applicants' invention. The amendments to the claims are supported by the originally filed disclosure.

Included herewith is a marked-up version of the amendments to the subject application by the current amendment. The marked-up versions are found on the pages captioned or entitled "Details of Amendments" that follow the signature page of the within Response.

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35 U.S.C. §102 REJECTIONS

The Examiner rejected claims 24-26 and 33 under 35 U.S.C. §102(b) and claims 1 and 9 under 35 U.S.C. §102(e) as being anticipated by the cited prior art for the reasons provided on pages 2-4 of the above-referenced Office Action. Because claims were amended in the foregoing amendment, the following discussion refers to the language of the amended claim(s). However, only those amended features specifically relied on in the following discussion shall be considered as being made to overcome the prior art reference. Support for the foregoing amendments can be found at page 23, line 22- page 24, line 12 and page 43, lines 3-7 (for claims 1, 9, 17, 27); page 24, lines 13-25 and page 20, lines 3-11 (for claim 24); and page 53, lines 4-25 (for claim 33). The following addresses the specific rejections provided in the above-referenced Office Action.

CLAIMS 1 & 9

Claims 1 and 9 stand rejected as being anticipated by Sato et al. (USP 6,232,939; "Sato") for the reasons provided on page 3-4 of the above referenced Office Action. Applicants respectfully traverse.

Applicants claim, claim 1, a display device driving circuit that includes a scanning signal line driving section for outputting display scanning signals respectively to scanning signal lines for displaying an image according to the display data with respect to pixels which are disposed in a matrix. The display device driving circuit includes a control means that switches, from successive output to simultaneous output, the output of the display scanning signals to the respective scanning

signal lines based on a transition instruction signal that causes the transition from successive output to simultaneous output. The control means also controls the output of the display scanning signals from the scanning signal line driving section to the respective scanning signal lines based on the transition instruction signal, so that the display scanning signals are outputted simultaneously with respect to all scanning signal lines until the next successive output is started by an instruction signal for successively outputting the display scanning signals.

Saito discloses a liquid crystal display apparatus having horizontal and vertical scanning circuits and scanning an array of pixels. Saito also discloses a liquid crystal display apparatus that outputs and latches an input signal at the rise and fall of the clock signal VCLK1. In the liquid crystal display apparatus of Saito, the duty ratio of the clock signal VCLK1 is changed to vary the phase of the output GS2 of the shift register for a pixel on an odd-numbered line, and the phase of the output GS3 of the shift register for a pixel on an even-numbered line. Further, in an overlapping time period of the output GS2 and output GS3, by supplying signals with the identical phase from the vertical scanning control terminals CNT1 and CNT2, it becomes possible to simultaneously drive outputs G2 and G3 from the vertical outputting circuit 32 (e.g., see col. 6, line 62 – col. 7, line 16, and col. 13 line 37 – col. 14, line 68 thereof). Thus, while the liquid crystal display apparatus of Saito may be able to simultaneously drive *adjacent* scanning lines (for example, scanning lines $2n-1$ and $2n$), neither of these adjacent scanning lines can be simultaneously driven with other scanning lines. For example, the scanning line $2n-1$ cannot be driven simultaneously with the scanning line $2n+1$. Thus, the liquid crystal display apparatus of

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Saito cannot simultaneously scan the entire non-image area with a single horizontal line or two horizontal scanning lines. Further, Saito does not teach causing a transition from a successive output to simultaneous output with respect to the output of the display scanning signals to the respective scanning signal lines based on a transition instruction signal. In addition, Saito does not even consider setting areas for simultaneous output and successive output.

It is respectfully submitted that the foregoing remarks distinguishing claim 1 from the cited reference also apply to distinguish the display device driving circuit of claim 9 from this reference.

It is respectfully submitted that claims 1 and 9 are patentable over the cited reference for the foregoing reasons.

CLAIMS 24-26 & 33

Claims 24-26 and 33 stand rejected as being anticipated by Osamu et al. (JP 2585463; "Osamu") for the reasons provided on page(s) 2-3 of the above referenced Office Action. Applicants respectfully traverse.

Applicant claims, claim 24, a driving method of a display device which outputs display scanning signals respectively to scanning signal lines, and outputs display data signals respectively to data signal lines, so as to display an image which is in accordance with the display data with respect to pixels which are disposed in a matrix, and has a partial display function for a non-image area and an image display area. This driving method includes distinguishing a predetermined display portion and a predetermined non-display portion from each other, and simultaneously

outputting the display scanning signals and the display data signals according to the non-image area with respect to the respective scanning signal lines and the respective data signal lines which correspond to the non-image area. The driving method also includes deactivating operation of the scanning signal line driving section until next display is carried out.

Osamu teaches simultaneously scanning a plurality of scanning lines, other than the scanning lines of the effective display portion, in a retrace period within one frame period, when the number of scanning lines in the display area is greater than that of the effective scanning lines of the input video signal (when the number of horizontal lines in a vertical period is smaller than the number of scanning lines of the display device). That is, the purpose of Osamu is to realize display without varying the vertical period (without changing the time axis) when the number of horizontal lines in a vertical period is smaller than the number of scanning lines of the display device. In this regard, the publication does not take into consideration the situation where the number of horizontal lines in a horizontal period of a given video signal is greater than the number of scanning lines in the display device. It is clear from this that Osamu is about simultaneously scanning a plurality of scanning lines, other than the scanning lines of the effective display portion, in a retrace period, and the publication is totally silent as to the operation for realizing low power consumption.

In as much as each of claims 25 and 26 depend from claim 24, claims 25 and 26 are considered to be in allowable condition at least because of their dependency from an independent claim that is considered to be allowable. It also is respectfully submitted that the foregoing remarks

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distinguishing claim 24 from the cited reference also apply to distinguish the image display device as set forth in claim 33 from the cited reference.

It is respectfully submitted that claims 24-26 and 33 are patentable over the cited reference for the foregoing reasons.

The following additional remarks shall apply to each of the above.

As provided in MPEP-2131, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegel Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Or stated another way, "The identical invention must be shown in as complete detail as is contained in the ... claims. *Richardson v Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ 2d. 1913, 1920 (Fed. Cir. 1989). Although identify of terminology is not required, the elements must be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990). It is clear from the foregoing remarks that the above identified claims are not anticipated by the respective cited reference.

It is respectfully submitted that for the foregoing reasons, claims 1, 9, 24-26 and 33 are patentable over the applicable cited reference and thus satisfy the requirements of 35 U.S.C. §102. As such, these claims, including the claims dependent therefrom are allowable.

35 U.S.C. §103 REJECTIONS

Claims 2-8, 10-23, 27-32 and 34-39 stand rejected under 35 U.S.C. §103 as being unpatentable over Saito in view of Osamu. Applicants respectfully traverse as discussed below.

Because claims were amended in the instant amendment, the following discussion refers to the language of the amended claims. However, only those amended features specifically relied upon to distinguish the claimed invention from the cited prior art shall be considered as being made to overcome the cited reference(s).

CLAIMS 2-8

As indicated in the remarks above regarding claim 1, Saito discloses a liquid crystal display apparatus that outputs and latches an input signal at the rise and fall of the clock signal VCLK1. In the liquid crystal display apparatus of Saito, the duty ratio of the clock signal VCLK1 is changed to vary the phase of the output GS2 of the shift register for a pixel on an odd-numbered line, and the phase of the output GS3 of the shift register for a pixel on an even-numbered line. Further, in an overlapping time period of the output GS2 and output GS3, by supplying signals with the identical phase from the vertical scanning control terminals CNT1 and CNT2, it becomes possible to simultaneously drive outputs G2 and G3 from the vertical outputting circuit 32 (e.g., see col. 6, line 62 – col. 7, line 16, and col. 13, line 37 – col. 14, line 68 thereof). Thus, while the liquid crystal display apparatus of Saito may be able to simultaneously drive *adjacent* scanning lines (for example, scanning lines $2n-1$ and $2n$), neither of these adjacent scanning lines can be simultaneously driven with other scanning lines. For example, the scanning line $2n-1$ cannot be driven simultaneously with the scanning line $2n+1$. Thus, the liquid crystal display apparatus of Saito cannot simultaneously scan the entire non-image area with a single horizontal line or two

horizontal scanning lines. Further, Saito does not teach causing a transition from successive output to simultaneous output with respect to the output of the display scanning signals to the respective scanning signal lines based on a transition instruction signal. In addition, Saito does not even consider setting areas for simultaneous output and successive output.

As indicated in the remarks noted above regarding claim 24, Osamu teaches simultaneously scanning a plurality of scanning lines, other than the scanning lines of the effective display portion, in a retrace period within one frame period, when the number of scanning lines in the display area is greater than that of the effective scanning lines of the input video signal (when the number of horizontal lines in a vertical period is smaller than the number of scanning lines of the display device). That is, the purpose of Osamu is to realize display without varying the vertical period (without changing the time axis) when the number of horizontal lines in a vertical period is smaller than the number of scanning lines of the display device. In this regard, Osamu does not take into consideration the situation where the number of horizontal lines in a horizontal period of a given video signal is greater than the number of scanning lines in the display device. It is clear from this that Osamu is about simultaneously scanning a plurality of scanning lines, other than the scanning lines of the effective display portion, in a retrace period, and the publication is totally silent as to the operation for realizing low power consumption.

As such it is respectfully submitted that the cited references, alone or in combination, also fail to teach or suggest the display driving circuit of claim 1. It is further submitted that the cited references, alone or in combination, also do not teach, suggest or offer any motivation for

modifying the circuitry of the principal reference Saito so as to yield the display driving circuit of claim 1. Each of claims 2-8 depends directly or ultimately from claim 1. Thus, claims 2-8 are considered to be in allowable condition at least because of their dependency from an independent claim that is considered to be allowable. Notwithstanding this, Applicants also make the following further observations regarding the cited prior art.

Applicants note that Saito also teaches turning off the switching elements for the image signal supply circuit 21, the vertical output circuit 32, and the image display area 10, so as to prevent a DC voltage from being applied to the liquid crystal (column 12, lines 7-28). However, Saito is totally silent as to deactivating the operation of the scanning signal line driving section based on a synchronize signal for image display and based on the transition instruction signal. That is, Saito neither discloses nor teaches/ suggests deactivating the operation of the scanning signal line driving section until the next display is carried out, after the display data signal for each non-display section has been outputted.

CLAIMS 10-16

As to claims 10-16, each of these claims depends directly or ultimately from claim 9. As indicated hereinabove, claim 9 is not disclosed in Saito. In addition, it is respectfully submitted that the Saito and Osamu, alone or in combination, fail to teach or suggest the display device driving circuit of claim 9. It is further submitted that the cited references, alone or in combination, also do not teach, suggest or offer any motivation for modifying the circuitry of the principal reference

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Saito so as to yield the display device driving circuit of claim 9. Thus, claims 10-16 are considered to be in allowable condition at least because of their dependency from an independent claim that is considered to be allowable. Applicants respectfully submit that the foregoing remarks distinguishing claims 2-8 from the cited combination of references, also apply to distinguish any of claims 10-16 from the cited combination of references.

CLAIMS 17-23

As to claim 17, Applicants claim a driving method of a display device which outputs display scanning signals respectively to scanning signal lines, and outputs display data signals respectively to data signal lines, so as to display an image which is in accordance with the display data with respect to pixels which are disposed in a matrix, and has a partial display function for a non-image area and an image display area. Such a method includes simultaneously outputting the display scanning signals with respect to the plurality of scanning signal lines based on a transition instruction signal that causes a transition from successive output to simultaneous output, so that the display scanning signals are outputted simultaneously with respect to all scanning signal lines until next successive output is started by an instruction signal for successively outputting the display scanning signals.

It is respectfully submitted that in view of the foregoing remarks regarding claims 1 and 24, Saito and Osamu, alone or in combination, fail to teach or suggest the method of a display device as set forth in claim 17. It is further submitted that the cited references, alone or in combination, also

do not teach, suggest or offer any motivation for modifying the method disclosed in the principal reference Saito so as to yield the driving method of claim 17. As to claims 18-23, each of these claims depends directly or ultimately from claim 17. Thus, claims 18-23 are considered to be in allowable condition at least because of their dependency from an independent claim, claim 17, that is considered to be allowable. Applicants respectfully submit that the foregoing remarks distinguishing claims 2-8 from the cited combination of references, also apply to distinguish any of claims 18-23 from the cited combination of references.

CLAIMS 27-32

As to claim 27, Applicants claim, claim 27, an image display device that includes a scanning signal line driving section for outputting display scanning signals respectively to scanning signal lines, and a data signal line driving section for outputting display data signals respectively to data signal lines, so as to display an image according to the display data with respect to pixels which are disposed in a matrix, said pixels having a partial display function for an image display area and a non-image area. Such an image display device further includes a scanning signal line control means for switching, from successive output to simultaneous output, the output of the display scanning signals to the respective scanning signal lines based on a transition instruction signal that causes the transition from successive output to simultaneous output. The scanning signal line control means also controls the output of the display scanning signals from the scanning signal line driving section to the respective scanning signal lines based on the transition instruction

signal, so that the display scanning signals are outputted simultaneously with respect to all scanning signal lines until next successive output is started by an instruction signal for successively outputting the display scanning signals.

It is respectfully submitted that in view of the foregoing remarks regarding claims 1 and 24, Saito and Osamu, alone or in combination, fail to teach or suggest the image display device as set forth in claim 27. It is further submitted that the cited references, alone or in combination, also do not teach, suggest or offer any motivation for modifying the device disclosed in the principal reference Saito so as to yield the image display device of claim 27. As to claims 28-32, each of these claims depends directly or ultimately from claim 27. Thus, these claims are considered to be in allowable condition at least because of their dependency from an independent claim, claim 27, that is considered to be allowable. Applicants respectfully submit that the foregoing remarks distinguishing claims 2-8 from the cited combination of references, also apply to distinguish any of claims 28-32 from the cited combination of references.

CLAIMS 34-39

As to claims 34-39, each of these claims depends directly or ultimately from claim 33.

It is respectfully submitted that in view of the foregoing remarks regarding claims 1 and 33, Saito and Osamu, alone or in combination, fail to teach or suggest the image display device as set forth in claim 33. In addition, it is respectfully submitted that the cited references, alone or in combination, also do not teach, suggest or offer any motivation for modifying the circuitry of the

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principal reference Saito so as to yield the image display device of claim 33. Thus, claims 34-39 are considered to be in allowable condition at least because of their dependency from an independent claim that is considered to be allowable. Applicants respectfully submit that the foregoing remarks distinguishing claims 2-8 from the cited combination of references, also apply to distinguish any of claims 34-39 from the cited combination of references.

As provided in MPEP 2143.01, obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *In re Fine*, 837 F. 2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F. 2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). As provided above, the references cited, alone or in combination, include no such teaching, suggestion or motivation.

Furthermore, and as provided in MPEP 2143.02, a prior art reference can be combined or modified to reject claims as obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Additionally, it also has been held that if the proposed modification or combination would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. Further, and as provided in MPEP-2143, the teaching or suggestion to make the claimed combination and the reasonable suggestion of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438

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(Fed. Cir. 1991). As can be seen from the forgoing discussion regarding the disclosures of the cited references, there is no reasonable expectation of success provided in the reference(s).

It is respectfully submitted that for the foregoing reasons, claims 2-8, 10-23, 27-32 and 34-39 are patentable over the cited reference(s) and satisfy the requirements of 35 U.S.C. 103. As such, these claims, including the claims dependent therefrom are allowable.

CLAIMS 40-43

As indicated above, claims 40-43 were added to more distinctly claim embodiments of the present invention. These claims, are clearly supported by the originally filed disclosure, including the originally filed claims, with particular reference to page 26, lines 4-16 (for claim 40); page 26, line 17-page 27-line 6 (for claim 41); page 23, line 22-page 24, line 12 and page 54, lines 7-17 and claims 1 and 3 (for claim 42); and page 52, line 22-page 53, line 3 and claim 24 (for claim 43). It also is respectfully submitted that these added claims are patentable over the cited prior art on which the above-described rejection(s) are based.

It is respectfully submitted that the subject application is in a condition for allowance. Early and favorable action is requested.

Because the total number of claims and/or the total number of independent claims in the subject application post amendment now exceed the highest number previously paid for, a check is enclosed herewith for the required additional fees. However, if for any reason a fee is required, a

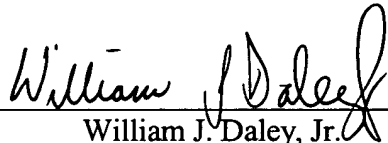
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fee paid is inadequate or credit is owed for any excess fee paid, the Commissioner is hereby
authorized and requested to charge Deposit Account No. **04-1105**.

Respectfully submitted,

Date: May 27, 2003

By:



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DETAILS OF AMENDMENTS

Please amend the subject application as follows:

IN THE CLAIMS

Amend claims 1, 9, 17, 24, 27 and 33.

1. (AMENDED) A display device driving circuit which includes a scanning signal line driving section for outputting display scanning signals based on display data respectively to scanning signal lines for displaying an image according to the display data with respect to pixels which are disposed in a matrix,

said display device driving circuit comprising:

control means for ~~switching, from successive output to simultaneous output, the output of the display scanning signals to the respective scanning signal lines based on a transition instruction signal that causes the transition from successive output to simultaneous output, and controlling the output of the display scanning signals from the scanning signal line driving section to the respective scanning signal lines based on the transition instruction signal, so that the display scanning signals are outputted simultaneously with respect to the plurality of all scanning signal lines based on a transition instruction signal, for causing a transition from successive output to simultaneous output with respect to the output of the display scanning signals to the respective scanning signal lines until next successive output is started by an instruction signal for successively outputting the display scanning signals.~~

9. (AMENDED) A display device driving circuit which includes a scanning signal line driving section for outputting display scanning signals ~~based on display data~~ respectively to scanning signal lines for displaying an image according to the display data with respect to pixels which are disposed in a matrix,

said display device driving circuit comprising:

input means for receiving a transition instruction signal for causing a transition from successive output to simultaneous output with respect to the output of the display scanning signals to the respective scanning signal lines; and

control means for ~~switching, from successive output to simultaneous output, the output of the display scanning signals to the respective scanning signal lines based on a transition instruction signal that causes the transition from successive output to simultaneous output, and controlling the scanning signal line driving section based on the transition instruction signal so that the display scanning signals are outputted simultaneously with respect to the plurality of all scanning signal lines based on the transition instruction signal until next successive output is started by an instruction signal for successively outputting the display scanning signals.~~

17. (AMENDED) A driving method of a display device which outputs display scanning signals respectively to scanning signal lines ~~based on display data~~, and outputs display data signals respectively to data signal lines ~~based on the display data~~, so as to display an image which is in accordance with the display data with respect to pixels which are disposed in a matrix, and has a

partial display function for a non-image area and an image display area, said driving method comprising the step of:

wherein simultaneously outputting the display scanning signals are outputted simultaneously with respect to the plurality of scanning signal lines based on a transition instruction signal that causes for causing a transition of from successive output to simultaneous output, so that with respect to the output of the display scanning signals are outputted simultaneously with respect to all to the respective scanning signal lines until next successive output is started by an instruction signal for successively outputting the display scanning signals.

24. (AMENDED) A driving method of a display device which outputs display scanning signals respectively to scanning signal lines based on display data, and outputs display data signals respectively to data signal lines based on the display data, so as to display an image which is in accordance with the display data with respect to pixels which are disposed in a matrix, and has a partial display function for a non-image area and an image display area,

said method comprising the steps of:

distinguishing a predetermined display portion and a predetermined non-display portion from each other;

wherein simultaneously outputting the display scanning signals and the display data signals according to the non-image area are simultaneously outputted with respect to the respective scanning signal lines and the respective data signal lines which correspond to the non-image area;

and

~~_____deactivating operation of the scanning signal line driving section until next display is carried out.~~

27. (AMENDED) An image display device which includes a scanning signal line driving section for outputting display scanning signals respectively to scanning signal lines based on display data, a data signal line driving section for outputting display data signals based on the display data respectively to data signal lines, so as to display an image according to the display data with respect to pixels which are disposed in a matrix, said pixels having a partial display function for an image display area and a non-image area,

said image display device comprising:

scanning signal line control means for ~~switching, from successive output to simultaneous output, the output of the display scanning signals to the respective scanning signal lines based on a transition instruction signal that causes the transition from successive output to simultaneous output, and~~ controlling the output of the display scanning signals from the scanning signal line driving section to the respective scanning signal lines based on the transition instruction signal, so that the display scanning signals are outputted simultaneously with respect to all the plurality of scanning signal lines until next successive output is started by an instruction signal for successively outputting the display scanning signals. ~~based on a transition instruction signal for causing a transition from successive output to simultaneous output with respect to the output of the display~~

scanning signals to the respective scanning signal lines:

33. (AMENDED) An image display device which includes a scanning signal line driving section for outputting display scanning signals respectively to scanning signal lines based on display data, a data signal line driving section for outputting display data signals based on the display data respectively to data signal lines, and a set section for setting an image display area according to the display data and a non-display area with respect to pixels, so as to display an image according to the display data with respect to the pixels which are disposed in a matrix,

said image display device comprising:

scanning signal line control means for controlling the scanning signal line driving section so that the display scanning signals are simultaneously outputted with respect to the respective scanning signal lines which correspond to the non-image area as set by the set section,

the scanning signal line driving section including a plurality of serially connected shift register sections for outputting the display scanning signals respectively to the scanning signal lines,
and

the scanning signal line control means individually and simultaneously scanning the shift register sections in the non-image area.

Add new claims 40-43 that read as follows:

40. (ADDED) The method as set forth in claim 17, wherein the display scanning signals

are outputted based on the transition instruction signal simultaneously to an odd-numbered line group of the scanning signal lines that correspond to an unscanned area and simultaneously to an even-numbered line group of the scanning signal lines that correspond to the unscanned area.

41. (ADDED) The method as set forth in claim 17, wherein the display scanning signals are outputted based on the transition instruction signal simultaneously to odd-numbered pairs of adjacent ones of the scanning signal lines that correspond to an unscanned area and simultaneously to even-numbered pairs of adjacent ones of the scanning signal lines that correspond to the unscanned area.

42. (ADDED) A display device driving circuit which includes a scanning signal line driving section for outputting display scanning signals respectively to scanning signal lines for displaying an image according to the display data with respect to pixels which are disposed in a matrix, said display device driving circuit comprising:

deactivating means for deactivating operation of the scanning signal line driving section based on a synchronize signal for image display and based on a transition instruction signal; and

control means for switching, from successive output to simultaneous output, the output of the display scanning signals to the respective scanning signal lines based on a transition instruction signal for causing the transition from successive output to simultaneous output, and controlling the output of the display scanning signals from the scanning signal line driving section to the respective

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scanning signal lines based on the transition instruction signal, so that the display scanning signals are outputted simultaneously within one horizontal period or two horizontal periods with respect to all scanning signal lines until next scanning is started.

43. (ADDED) A driving method of a display device which outputs display scanning signals respectively to scanning signal lines, and outputs display data signals respectively to data signal lines, so as to display an image which is in accordance with the display data with respect to pixels which are disposed in a matrix, the display device having a partial display function for a non-image area and an image display area, horizontal signal lines in a vertical period of the display device being greater in number than the scanning signal lines, said method comprising the step of:
simultaneously outputting the display scanning signals and the display data signals according to the non-image area with respect to the respective scanning signal lines and the respective data signal lines that correspond to the non-image area.